

REMARKS

Claims 1, 3, 4, 6, 8, 9, 11, 12, 14, 16, 17, 19, 20, 22 and 24 are currently pending in the application.

This amendment is in response to the Final Office Action of November 27, 2006.

Claim Objections

Claims 1, 3, 4, 6, 8, 12, 14, 20 and 22 are objected to due to informalities in the claim language. Appropriate correction has been made.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on U.S. Patent 5,972,234 to Weng et al. in view of U.S. Patent 5,300,172 to Ishiwata et al.

Claims 1, 3, 8, 9, 11, 16, 17, 19 and 24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Weng et al. (U.S. Patent 5,972,234) in view of Ishiwata et al. (U.S. Patent 5,300,172). Applicants respectfully traverse this rejection, as hereinafter set forth.

Applicants assert that to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the cited prior art reference must teach or suggest all of the claim limitations. Furthermore, the suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Applicants' disclosure.

After carefully considering the cited prior art, the rejections, and the Examiner's comments, Applicants have amended the claimed invention to clearly distinguish over the cited prior art.

Turning to the cited prior art, Weng et al. teaches or suggests a method for marking a semiconductor surface. Weng et al. describe a polymeric tape can be provided that is suitable for ablative photodecomposition. Column 4 lines 25-40. In other words, the mark which is to be

formed in the semiconductor surface is first formed as a cavity through the tape using “high-intensity energy beams such as ultraviolet light or laser.” Column 4 lines 32-33; *See also* column 2 lines 63-63, column 3 lines 6-11, column 3 lines 22-23, column 3 lines 27-30, column 3 lines 39-40, column 4 lines 52-54. After the mark has been formed *through* the tape, the tape is applied to the semiconductor surface. Column 4 line 57 – column 5 line 7. Finally, the mark is formed in the semiconductor surface by etching the semiconductor in the area exposed by the mark formed in the tape. The tape protects the rest of the semiconductor surface from the etchant, such that the mark in the tape is patterned into the semiconductor surface. Column 5 lines 8-25. Finally, the tape is removed from the surface of the semiconductor, leaving the mark formed by the etchant. Column 5 lines 27 – 37. The tape has a thickness of about 0.5 mm and can be provided with an adhesive backing or without an adhesive backing. Column 5, lines 38-41. A suitable adhesive may be an acrylic type polymer. Column 4, lines 63, 64.

The Ishiwata et al. reference teaches or suggests the use of a radiation curable adhesive tape on a wafer to form a three dimensional network.

Applicants assert that any combination of the Weng et al. reference in view of the Ishiwata et al. reference fails to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the claimed inventions of presently amended independent claims 1, 9, and 17 because cited prior art fails to teach or suggest all the claim limitations and the suggestion to make the claimed combination and the reasonable expectation of success must be found solely in Applicants’ disclosure, not the cited prior art.

Applicants assert that the cited prior art fails to teach or suggest the claim limitations of presently amended independent claims 1, 9, and 17 calling for “a tape comprising a flexible film material having a coefficient of thermal expansion substantially similar to the semiconductor device”, “a flexible film material having a coefficient of thermal expansion substantially similar to the semiconductor device”, “film material having a coefficient of thermal expansion substantially similar to the semiconductor device”, “a first outermost adhesive layer comprising a mixture of electromagnetic radiation-curable components, the electromagnetic radiation-curable components providing a laser-markable surface upon exposure to an electromagnetic radiation source by curing and bonding to at least a portion of a semiconductor device and forming a mark

on the semiconductor device when a laser marks a semiconductor device”, “a first outermost adhesive layer comprising a mixture of electromagnetic radiation-curable components providing a mark on a laser-markable surface upon exposure thereof to electromagnetic radiation by curing and bonding to at least a portion of a semiconductor device when a laser marks a semiconductor device”, and “a second adhesive layer different than the first outermost adhesive layer disposed between the tape and the first outermost adhesive layer, the second adhesive layer comprising a mixture of electromagnetic radiation-curable components upon exposing to radiation the second adhesive layer performs at least one property of the adhesive facilitating peeling of the flexible film material when a laser marks a semiconductor device”. Applicants assert that no combination of the Weng et al. reference and the Ishiwata et al. reference teaches or suggests the use of a tape which has a portion thereof left on a semiconductor device for a mark after electromagnetic radiation has been applied thereto. Applicants assert that, in contrast to the presently claimed inventions of presently amended independent claims 1, 9, and 17, the Weng et al. reference, at best, teaches or suggests a tape having one single adhesive layer, not a tape having multilayer adhesive used to make a cavity in which an etchant is used to mark the semiconductor device, not electromagnetic radiation as required by the claimed inventions, while the Ishiwata et al. reference teaches or suggests the use of a radiation curable adhesive tape on a wafer to form at three dimensional network while any combination of the Weng et al. reference and the Ishiwata et al. reference teaches or suggests a tape having one adhesive layer used to form a three dimensional network. Further, Applicants assert that since Weng et al. does not teach or suggest using a tape that has laser markable surface and since Ishwata et al. teach or suggest the use of a radiation cured adhesive used to form a three dimensional network, any rejection based upon the Weng et al. reference and the Ishawa et al. reference is a hindsight reconstruction of the Applicants inventions based solely upon Applicants’ disclosure because neither Weng et al. contains any such teaching or suggestion and Ishawa et al. merely forms three dimensional networks using adhesive. In each instance of the various embodiments of the Weng et al. reference, the semiconductor device is marked using an etchant, not a laser. In Ishawa et al. the adhesive is used to form only three dimensional networks. The claimed inventions of presently amended independent claims 1, 9, and 17 contain the claim limitations for

a tape having at least two layers of different adhesive thereon. The first layer of adhesive contains the claim limitation calling for “a first outermost adhesive layer comprising a mixture of electromagnetic radiation-curable components, the electromagnetic radiation-curable components providing a laser-markable surface upon exposure to an electromagnetic radiation source by curing and bonding to at least a portion of a semiconductor device forming a mark on the semiconductor device when a laser marks a semiconductor device” or “a first outermost adhesive layer comprising a mixture of electromagnetic radiation-curable components providing a mark on a laser-markable surface upon exposure thereof to electromagnetic radiation by curing and bonding to at least a portion of a semiconductor device when a laser marks a semiconductor device”. The second layer of adhesive contains the claim limitation calling for a different adhesive than the first outermost layer of adhesive comprising “a mixture of electromagnetic radiation-curable components to radiation the second adhesive layer performs at least one curing onto portions of the first outermost adhesive layer and losing adhesive properties for facilitating peeling of the flexible film material”. The second layer of adhesive has different properties from the first layer of adhesive. The different properties of the first layer of adhesive and the second layer of adhesive are clearly distinct from each other as both described in the independent claims 1, 9, and 17 and in Applicants’ disclosure. Such properties are set forth in the claimed inventions of presently amended independent claims 1, 9, and 17. In contrast to the claimed inventions, the Weng et al. reference merely teaches or suggests a single layer of adhesive. Applicants assert that all words in a claim must be considered in judging the patentability of that claim against the prior art. *In re Wilson*, 424 F.2d 1382, 165 USPQ 496 (CCPA 1970) MPEP § 2143.03. Applicants assert that neither the Weng et al. reference nor the Ishiwata et al. reference nor any combination thereof teaches or suggests the use of a second adhesive layer different than the first outermost adhesive layer. Accordingly, Applicants assert that the rejection does not and cannot establish a *prima facie* case of obviousness under 35 U.S.C. § 103 because all the claim limitations are not taught or suggested by the prior art. *In re Robka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974) MPEP § 2143.03. Therefore, presently amended independent claims 1, 9, and 17 are allowable as well as the dependent claims therefrom.

Further, Applicants assert that to include radiation-curable components into any adhesive layer formed in the tape disclosed by Weng et al. would render the invention inoperable. Specifically, applying any energy would *cure* the adhesive layer, which would prevent a pattern from being formed through the tape. Therefore, no mark could be formed through the tape by any ablative photodecomposition process followed by the use of an etchant to form a mark on the semiconductor device if the adhesive layer of the tape were to include radiation-curable components. Applicants respectfully assert that a tape comprising an adhesive layer including radiation-curable components is not “any suitable tape of polymeric based material, which can be easily patterned by high-intensity energy beams such as ultraviolet light or laser” or is not any single layer of adhesive containing “arbitrary or imaginary layers within a single layer”.

Additionally, Applicants assert that the Weng et al. reference merely describes a photodecomposition process employing an excimer type laser for ablating the polymeric based tape. The Weng et al. reference contains no description whatsoever as to how an excimer laser affects the adhesive. Applicants assert that absent any description as to how an excimer laser affects the adhesive used with the tape, any rejection based upon the Weng et al. reference is based solely upon Applicants’ disclosure, not the cited prior art.

Yet further, Applicants assert that the sole basis for any rejection under 35 U.S.C. § 103 based upon the cited combination of the prior art is solely Applicants’ disclosure. Applicants assert that such is clearly evident by the comments in the Office Action directed to the fact that nowhere in the Weng et al. reference is there any teaching or suggestion for multiple layers of adhesive. Solely the Applicants’ disclosure contains any such teaching or suggestion.

Applicants assert that such cited prior art does not and cannot establish a *prima facie* case of obviousness under 35 U.S.C. § 103 because such prior art fails to teach or suggest all the claim limitations and the suggestion to make the claimed combination and the reasonable expectation of success must be found solely in Applicants’ disclosure, not the cited prior art.

Accordingly, Applicants assert that claims 1, 3, 4, 6, 8, 9, 11, 12, 14, 16, 17, 19, 20, 22 and 24 are allowable.

Applicants request entry of this amendment for the following reasons:

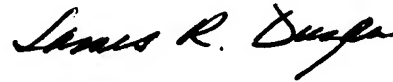
The amendment is timely filed.

The amendment places the application in condition for allowance.

The amendment does not require any further search or consideration.

Applicants request the entry of this amendment, the allowance of claims 1, 3, 4, 6, 8, 9, 11, 12, 14, 16, 17, 19, 20, 22 and 24, and the case passed for issue.

Respectfully submitted,



James R. Duzan
Registration No. 28,393
Attorney for Applicants
TRASKBRITT
P.O. Box 2550
Salt Lake City, Utah 84110-2550
Telephone: 801-532-1922

Date: January 22, 2007

JRD/djp:lmh

Document in ProLaw